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Certain needs are perceived as a set of motivational systems that are necessary for satisfactory adjustment to the teaching profession. The college professor is described as an individual who is low on economic motivation, is not survival oriented, and has high ethical standards and a strong need to communicate facts and ideas to others. In terms of college teaching as a motivated behavior; the professor is not stimulated by internal systems of basic biological drives and their derived drives for money and material gains. Competence appears to be an important motivational source. However, in the model described, the primary motivational system for entering and remaining in college teaching is called the central incentive system, which is powerful in initiation and maintaining qualities, has little to do with survival, and is compatible to other motivational systems. Man can respond to this system by enjoying pleasure for pleasure's sake. In the case of a college professor, pleasure is derived from the maintenance and perpetration of scholarly, intellectual, and unproductive ideas. It is only within an academic community that this form of pleasure may be maintained. Students in their junior year who evince a motivation toward curiosity and the manipulation of ideas should be challenged with a central incentive. The ensuing interaction of the competence incentive system and the central incentive system will increase the quantity and quality of students entering the profession of college professor. (WM)

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Internal, External and Central Incentives of College Teaching

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While the literature on the origin and nature of the primary and secondary school teacher is extensive, this same analysis of the college teacher is limited. There has been some concern for the problems of college teaching in the last ten years, in particular the problem of improving the quality of teaching but not teachers (8). Little or no research has been done in the area of the problems of securing and selecting potential college teachers. The problem of motivating individuals into the profession of college teaching appeared to be untouched. Therefore, as a rigorous experimental psychologist and college teacher, I turned to the possibility of doing my own research on the problem. I entertained a variety of approaches to the question. The first that came to mind was to report my own personal experience in depth as in the rigorous introspective tradition of Wundt and Titchner. I comtemplated the possibility of establishing a psychophysics of college teaching. I soon discovered that the question did not lend itself to the psychophysical approach and I was becoming more journalistic and artistic in my reporting; i.e., I was becoming autobiographical. You might say that I was trying to be the Henry Miller of motivating students for college teaching. But my topic was not as interesting as Henry Miller's; my experience was not as interesting as Henry Miller's, and I could not write like Henry Miller.

I then turned to another acceptable method of inquiry: reporting the experience of others. This method also had its pitfalls and the degree of rigor ran from meticulous sampling procedures utilizing standardized questionnaires

or interviewing techniques to the typical journalistic poll. I thought of trying the Kinsey approach, to discover how to motivate students for college teaching. But alas, it soon became apparent that collecting facts about who does, who doesn't, how often, and with whom in teaching, was not as fascinating as who does, who doesn't, how often, and with whom in sex. Besides, students and faculty were often reluctant to respond or were incapable of responding.

A third alternative that I entertained might be described as the Masters and Johnson approach. I took the attitude: Let's watch them, ask them and measure them where possible. Let's turn to the true professional and find out the tricks of the trade, the subtle innuendoes and methods that the old pros use to bring out the best in their partners in the educational system, those tricks that would keep them coming back for more. Here I found the basic difference between sex and teaching. Like sex, most people, as well as pros, participate (mothers, fathers, managers, foremen, single men, single women, some college professors, some clergy), all have opinions. Some people, such as deans and department chairmen, don't like to talk about it. Some consider it a necesary evil; some even consider it dirty, and some college professors claim to be celebic. But none will admit to prostitution.

Here are some quotes from the old pros: "You get paid for teaching, but you get promoted for everything else that you do." "I am not here to teach students, they are here to learn". "This is an institution of higher learning, not an educational institution." "Name one psychologist that became famous because he was a great teacher." "I teach at the college level to be free to do research of my own choosing." It would appear that teaching is a nuisance factor for the more basic pursuits of being a college professor. College teach-

ing plays a minor role in the life of the college professor and must be tolerated as part of a system.

The importance of teaching in the role of college professor is further evidenced by the training that most of these old pros received prior to entering the profession. Although they all agreed that at least 50% of their time should be devoted to teaching, very little of their preparation for the profession was spent in learning to be a teacher. Most of their teacher training was informal and casual, or on the job. Approximately 66% of the future Ph.D's are teaching assistants some time during their careers (1). In fact, the bulk of college teacher training appears to take the form of imitation. Students imitate their major professors, favorite professors, or pet theory of learning. The old pros in college teaching could not tell me much about getting students into the business.

In the following analysis, I will take a little bit from all of the methods. I will attempt to weave a picture of the college professor, as a person and as a professional, then I will attempt to develop a working model for motivating students. Bias may peek through on occasion, but I will attempt to be as scientific and objective as possible with this delicate subject.

I. Profession of College Professor and Teacher

A. First Assumption:

The first assumption that I will make is that college teaching is a form of work. A great deal of the population does not share this opinion, and one presidential candidate has suggested that we "pseudointellectuals" might find a more socially acceptable form of employment. If we assume that college teaching is a job, then what form does it take? I think we might find some objective criteria. When my major professor appeared on the television program,

"What's My Line?", he was described as an individual who was salaried and performed a service.

B. Why Do People Work?

Upon looking into the question of why people work, we find the area quite controversial, and many theories, social and political, have been expounded. I will not take a position but rather attempt to be strictly descriptive. The typical industrial psychology text (13) would probably list the following reasons for why people work: 1) Work provides subsistence. Most everyone works for money, for food, for survival. 2) Work regulates activity. It sets up schedules for us. It gets us places on time. It sets up the daily pattern, the weekly pattern, the monthly pattern, and in some cases, the annual pattern. 3). Work provides patterns for social interactions. It delineates most of our nonwork associations. 4) Work provides a mechanism for self actualization. Work helps the individual answer the question, "Who am I?" 5) Work provides social status. "The social standing of most adult males and their families is largely determined by the prestige of their occupation and the reputation they have established at work." (12, p. 21)

C. Minimal Requirements:

1. I.Q.:

College teaching, as a profession, dispenses a service. As a profession, it shares with other professions the characteristic of having an intellectual base (12, p. 123). The service we perform is based on a theory, orientation, and/or scientific knowledge, rather than on a set of customary practices, such as in a skilled craft. Therefore, it would appear that there is some minimal I.Q., a minimal intellectual base, upon which becoming a college teacher depends.

Now what is the minimal I.Q.? I've discussed this with a variety of friends, and there appears to be a wide range of opinions. Some feel that average intelligence or slightly above average is a sufficient condition. However, others emphasize that a high I.Q. is an absolute necessity. I might point out that while making these inquiries under a variety of different conditions, the level of I.Q. necessary to meet the requirements of college teaching appears to increase as a function of time at a cocktail party.

2. Financial Abilities:

The potential college teacher must have some minimum financial base or background to assist in achieving a higher education. In 1962-63, colleges contained 35% Doctorates, 47% Masters, 12% Bachelors, and 5% Professional degrees. At the university level, it was 43% Doctorates, 27% Masters, 12% Bachelors, and 17% Professional degrees (3). It is obvious, then, that the students must have some minimal financial status which will assist him in achieving at least a Bachelor's degree. Scholarships are available, but the greatest preponderance of scholarships are available at the masters and doctorate level. No matter what the source of the finance, the potential college professor must arrive on the college scene. The decision to enter the profession is most frequently made at this level of education (6). The minimal financial base refers to support to achieve a Bachelor's degree.

3. Basic Motivational Structure:

What are the minimal motivation requirements for becoming a college teacher? Is there a form of motivational structure that would suit a person for college teaching? I think that there is, and it is probably similar to the motivational structure that characterizes the potential primary and second-

ary school teacher (10). My own analysis of the available information would suggest the following: a) High educational expectancy: After achieving a certain educational level, the individual must have motivation to continue and must have a long term goal or expectancy of achieving a level higher than he is at the present moment. Seventy-seven percent of graduate students and fifty-nine percent undergraduate students said that they made the decision to enter the teaching profession during the last two years of college (10). b) Low in financial expectancy: You will never become rich as a teacher. A 1967 issue of Playboy magazine rated a variety of professions in terms of starting salary, rate of promotion and terminal salaries. In all cases, the college professor came out on the bottom. Even though great strides have been made to bring the professor up from the lower economical level to the middle class in recent years, all they seem to have actually done is stay on the bottom rung of the professions. c) High ethical standards: By definition you cannot be in business and politics and have high ethical standards. The potential college teacher must have a felt need for high ethical standards, and perceive the profession of college professor as a method or way of meeting this personal need. d) Need to communicate: The college teacher must have a high degree of need to communicate on an interpersonal level. He must have a need to communicate facts and ideas to others, and in particular, to those that do not possess the information at the level of his own competence.

These needs appear to be a set of motivational systems that are perceived as being necessary for adjustment to the teaching profession. As such they are closely tied to motivating students toward the career of college teaching, but are also essential to finding satisfaction within the profession.

D. The Profession:

1. Unique Characteristics:

Although college teaching does not compare with any of the professions in financial rewards, there are other aspects of the profession that make it attractive. The college professor rarely, if ever, is under direct supervision command or demand. The college professor, in contrast to most professions, has no clients except as he might view his students, or, in an ultimate sense, society; and bosses if any are often undetermined (12).

Indeed, American professors have always worked in an organized setting in colleges and universities which minimize administrative control over research and teaching. This is particularly true of the professor-scientist-teacher. The principal public for the professor-scientist-teacher is his fellow professor-scientist-teachers, peers in a position to judge competence. In contrast, other professionals are not judged by their peers, but rather by their clients, or their employer-client who usually cannot judge competence but rather productivity, out-put or client-centered satisfaction (12).

Thus, if the college teacher wishes to maximize his success, he should become sensitive to his colleagues and deans and not to his students. It is a maxim, long known in our circles, that it takes a combination of incompetence in teaching and research to be removed from the field. The highly competent investigator, but totally incompetent teacher will be maintained much longer in the system than the highly competent teacher who does not demonstrate competence in his field, or who is judged incompetent by his colleagues.

Fortunately for the profession, there is ample evidence to demonstrate that professional competence in research as measured by the ability to secure

federal research grants is correlated with student ratings of good teaching ability (7). The correlation is not high, but the fact that the correlation is not negative should help put down the hue and cry about our research oriented professors being poor teachers. More important is the fact that it is obviously more economical for a university to have a teacher that brings in grant money and national prestige, than it is to have an equally competent teacher who does not carry this fringe benefit with his teaching ability.

Nevertheless, we should not lose sight of the critical criteria that differentiates the college professor from other professions and "jobs". For all practical purposes he is outside of the profit and loss ledger. There are few, if any, supervisors who are not colleagues and he doesn't usually have to give a damn about his clients--the students.

2. Evaluating College Teaching:

College teaching is evaluated in a most mysterious manner. Student ratings ranked 10th in universities, and 15th in teacher colleges as a method for evaluation of teachers. These evaluations are actually used as promotion criteria in only 13% of the universities, 4.9% of the teacher colleges and 11% of the liberal arts colleges. Yet, teaching ability ranks highest as a factor in evaluating faculty for promotion, salary and tenure. Ninety to ninety-five percent of the deans in universities check classroom teaching as a major factor for promotions and advancement, yet less than 4% visit the classroom, and most use advice or ratings from the chairmen who do not visit the classroom or use student evaluation (1). By some form of magic, the dean or the chairman gets some estimate of a man's teaching worth.

3. Probable Primary Economic Function of College Professors:

Since the college professor is not on the profit motive market place, for whom does he produce, how is he used in a free enterprise, profit-oriented system?

(a) He keeps a large segment of the population off the labor market for a considerable period of time. During this time this portion of the population is not producing goods and services to place on the market, but they still have requirements and spend a considerable amount of funds to maintain themselves during the college years.

(b) He demonstrates that a large number of people are teachable. That is, a large number of people can learn a lot of different things even if they don't like the subject, enjoy the subject, or see any use in the subject. Students under his tutelage demonstrate that they are capable of proceeding through a maze of requirements and rules that stand as road blocks and detours in the road of college life. Thus, students that achieve the degree have demonstrated a degree of persistence and ingenuity that has pay-off for industry and government. Long before the interviewer arrives on the campus, the college professor has functioned as a scout and filter for industry and government. The college professor assists, at times unwittingly, in the selection of the technocrats of tomorrow, just as college atheletic departments function as the minor league and selection ground for the professional athelete of tomorrow.

4. Stages in the Development of College Teachers:

Most teachers are made, not born. They must go through developmental stages that are not significantly different from other members of the species. I see three major periods, there may be more, but the three described below appear to be qualitatively different, although they may overlap in time.

(a) Age of onset: It would appear that the critical period for imprinting future college professors is in the early years of college. I call this the

critical period because the liberal arts college student has already delayed the choice of a profession once in his life when he decided to enter this branch of higher education. Also, 88% of the students who stated they were going to enter college teaching as a profession made this decision during their undergraduate careers (6). The similarity between the imprinting phenomenon and selection of college teaching as a career does not end with the critical period concept. It is obvious that a particular object is the crucial stimulus which initiates the action. The event which stimulates a student in the direction of college teaching is usually personal contact with a particular member of the faculty (6). An idea, book, dream or goal rarely is the stimulus for this action. As with imprinting, some member of the species is the primary motivating source.

(b) Puberty rites: Once a student has hinted at, or committed himself toward a teaching career, we immediately set up a series of goals and rites. Usually these take the form of a bachelors and/or masters degree which are in many cases miniature analogs of Ph.D. programs through which the major professor has suffered.

The bright young student going on into college teaching will do an undergraduate thesis (usually in the area dear to the heart of his favorite professor). In other words, the first thing we do with a good student, that wants to go into college teaching and become a college professor, is get him active in our research or related research activities.

We initiate him into some (not all) of the mysteries of academia and might even crown this period of development by permitting him to present a paper at a regional meeting, or make him junior author on a publication. His introduction to the teaching portion of the profession will probably take the form of manual

labor in a laboratory course, or clerk in a large lecture course. But during this stage he is the center of attention, or thinks he is the center of attention. He is made to feel important and approaches maturity, (graduate school) secure in his decision to become a part of the profession. He is beginning to feel as if he is a member of the species.

(c) Maturity and fertility rites: It is during this period that the student begins his introduction to the realities of life. He soon learns that the Ph.D. is not a degree that even refers to the individual's ability or competence to teach in his field or any related field. It is a degree which is a demonstration of the ability to do independent research in an area. There is little, if any, measurement taken of competence in an area, just some estimate of his ability to do research. It turns out that there are two ways to increase the research activities of graduate students. First, tell them that they are good researchers; second, tell them they will be good teachers. "Being told you will make a good teacher by a faculty member who values research is, it would appear, most likely to be viewed as the kiss of death and seen not so much as praise, but as a cue that the student is on the wrong track" (15 p. 158).

The Ph.D. is not designed to pay off in good teaching. The rites are designed to produce a productive professional whose primary function is to be a scholar-technologist, not a teacher. Good teaching might just be an artifact of the other pursuits that go into being a college professor. The final oral examination for the Ph.D. degree, the defense of the thesis, is the final trial the student must take as a subordinate. Once he passes this point he can reproduce as a peer with all rights and privileges.

II. A Motivational Model

A. The Systems:

In 1953, Harlow (4) pointed out that there are probably two basic motiva-

tional systems. One initiates activity through internal stimuli such as the lining of the stomach, blood chemistry, etc., and the other initiates activity through external stimuli such as new or novel objects. The operation of both of these systems are necessary for the survival of all organisms. However, there are phylogenetic differences. The lower the organism is on the phylogenetic scale, the more it must depend on the internal system for control of behavior. The higher up the organism is on the phylogenetic scale, the more independent it is of the internal environment as external control of motivation dominates the organism's behavior. Thus, in the rat, the presence of hormones and innate mechanisms may be sufficient conditions for producing sexual behavior, while in the old world primate, the presence of hormones may be neither necessary nor sufficient, but rather a long history of learning and a host of external conditions are necessary for normal sexual behavior to develop (5).

In terms of college teaching as a motivated behavior, it is obvious that the internal systems of basic biological drives and all of their derived drives for money and material gains cannot be the initiating or maintaining source of motivation. The initial and final level of financial payoff is too low. Nor could motives derived from prestige be used to account for inducing students into college teaching. It has been found that college students rate doctors, lawyers, and engineers in higher prestige positions than college teachers (7).

It would appear that the college teacher must depend upon the external drives for the initiation and maintenance of his motivation. If this were true he would be dominated by curiosity and manipulation motives. He would also be stimulated by the construction, organization and systemization of ideas. It would suggest that competence motivation as described by White (14), must have

high intrinsic payoff for the college teacher. At first glance this appears to be the primary source of motivation for college professors.

However, competence motivation cannot be the only system that initiates and maintains an individual in the college teaching profession. There are too many other professions in which these same motives could be satisfied, have equal opportunity for gratification, and much greater payoff for the internal system, even if the latter motivation is low.

Furthermore, it appears to me that competence motivation is closely tied to survival of the species, and there are many things about the behavior of the college professor that are not survival oriented. I have suggested, for example, that he is low on economic motivation and high on ethical standards, a potentially lethal, if not suicidal, set of motives in our contemporary society. Fortunately, I see his position as being outside of the profit and loss criteria of production, the payoff of our society. He can exist in our society as long as he keeps his ethical standards to himself and out of politics and business. But something has to turn him on, and something has to keep him going. In other words, there must be an additional source of motivation that has three characteristics: (1) It must be extremely powerful in its initiation and maintaining qualities. (2) It must have little to do with the survival and characteristics of the species, and (3) it must be compatible or complimentary to the other motivational systems.

This motivational system was discovered a few years ago by James Olds (11). He discovered that animals with implants in certain areas of the brain would learn and work very hard for stimulation in particular areas of the brain. In succeeding years it was found that this was a very powerful form of motiv-

ation. Animals would rather receive a jolt than eat, they would take a great deal more punishment for a zap in the pleasure center than they would for food or sex. The CER, conditioned emotional response, would often fail to appear when the incentive was a central stimulation. Note the almost fatal characteristic of these motives.

It is important to remember that the only place that an animal can survive when under central incentive system control, via direct stimulation, is in the laboratory. Out in the real world, he would soon be eliminated from his ecological ~~nitch~~ niche if he continued to respond to this central incentive system, rather than either the internal or external incentive systems.

I think that man has the unique characteristic of being capable of responding to this central incentive system without direct electrical stimulation. He can enjoy pleasure for pleasure's sake. He can be highly motivated by a useless, nonproductive system of ideas that have no validity and no survival value in the world around him and find great pleasure. In some cases, it would appear that the less productive and survival oriented, the more some individuals enjoy the activity.

Only in an academic community can such forms of pleasure be maintained. Serendipitous results might develop. (Animals, human and nonhuman, can now be taught a variety of tricks with great efficiency.) But this fact is secondary to the primary fact that intellectual, scholarly, unproductive ideas can be maintained and perpetrated ad infinitum only in the academic community.

With this powerful motivating system in a medium which supports other needs, those motives previously exclusive to the external and internal systems can be woven into a totally integrated system with the central system as the pivotal

point of initiation and maintenance. All the sources of competence motivation can be brought to bear on this central incentive system. The need for organization and systemization is readily met in the construction (autistic construction, obviously) of elaborate theories and systems. The manipulation motives are satisfied with development of elaborate equipment and apparatus. The theories generate testable (but nonfunctional) ideas which generate more theorizing and the whole external incentive system is on an escalating carousel of gratification, driven by the central incentive motor.

If enough peers and subordinates share a particular central incentive system, a group can be formed which will aid in fulfilling all of the gregorious maternal and paternal needs of the species. As the number of individuals increases and their geographical distribution becomes extensive, an association or society might be formed. In order to establish another mode of communication within the group and establish a place in recorded history, a journal might be created. With this medium now established in which to publish and show deans and teachers in the academic community a source of productivity, the basic requirements of the academic system can be met, and the minimal biological needs (which would be minimal if you were in the profession) could easily be met.

As our peers and former subordinates begin to permeate government, industry and administration, our central incentive system begins to take on credence and plausibility. Better yet, if something serendipitous happens to develop from this system, the stronger the system becomes. (We are all aware of the effects of partial reinforcement). We now have a system that meets all needs related to human living and survival. This unique profession in this

unique position provides fringe benefits in secondary motivational systems that often are not easily met. The closed central system becomes a source at which we can direct aggression rather safely. We can achieve self actualization, awareness of existence, with full force, and need not concern ourselves with reality checks outside of the immediate peer group. Finally this system provides a means of meeting the need for magic control (9). We can weave great tales and at times produce great magic and certainly weave great spells. The primary motivational system for entering and staying in college teaching is the central incentive system.

B. Application to the College Student:

I. Imprinting and Nurturing Competence

First there are classes of students we should select just to save time and effort. Those high in internally direct motives (primitive but usually highly successful businessmen) would not be good risks. Those high on externally directed motivation, the curious, idea manipulating student, should be the object of the imprinting procedure. By his junior year, and no later than his senior year, he should be challenged toward some central incentive which will maximize the use of his competence motivation--an apparatus, an idea, a method, et., and have little functional significance.

Let him taste and feel the power that goes with being in control of a central incentive. He should be freed from real world constraints and worries; freed from formal courses. For example, let him feel the open endedness of the achievement motive in the academic world. Hook him to a central system in which he must invest a great deal of psychic effort. This will heighten the probability of his continuing in these pursuits. It is all up to us, the professors of

this generation, since over 80% of the students feel that faculty contact is the primary stimulus for entering college teaching as a career. We are the primary initiating stimulus. We must imprint them during their critical period and then, as with all primates, maintain a medium of reinforcement schedules in which puberty can be reached with minimum stress and threat. We want these individuals to reach adulthood totally committed to the system. We can do this by exploiting what appears to be a classical example of the interaction of two variables. In this case the interaction of the two potentially dominant forms of motivation--the competence incentive system and the central incentive system. The interaction of these two systems under the proper conditions will assure us that more of the brighter Ph.D.'s will stick through the years of study and will stay in the profession long enough to initiate the next generation into the system.

Utilizing these motivational systems may increase the quantity and quality of men and women entering the profession of college professor, but it will have very little impact on the role of the professor as a college teacher. At present, there is great concern from all sides of the fence about the quality of college teaching but little is being done about it. There have been several attempts to deal with the problem, but old ideas die hard. The Ph.D. is a research, not a teaching degree and what school wants to become famous for turning out good teachers? Do the research qualities of a person suffer if he is given a little expertise in the art of teaching? Too many chairmen and deans rely on the assumption that good teachers are born, or emerge as a result of some automatic process in the graduate departments.

Graduate students will continue to imitate their old professor, good or bad, will know very little about teaching and teaching techniques, and very little about their students as they begin their first teaching assignments. Through the old Thorndiken principles of trial and error, they will gradually develop a method of delivery and organization of information that is most comfortable for them. They may know much about the science of learning, but they have spent little time developing the tricks of the trade that contribute to the art of teaching. Why should they? Until teaching assumes a primary, or at least a role of equal importance to research in the development and survival of the college professor, teaching quality at the college level will continue as we know it today.

References

1. Asten, Alexander W. and Calvine B.T. Lee, (1967), Practices in Evaluation and Training of College Teachers. Improving College Teaching, Calvine B.T. Lee, Editor. American Council on Education, Washington, D. C.

2. Breder, Jack B. (1968), Teaching Effectiveness and Government Awards, Science, 160.

3. Educational Record, Summer 1963.

4. Harlow, W. F. (1953), Mice, Monkeys, Men and Motives, Psychol. Rev., 60, 23-32.

5. Harlow, H. F. (1962), The Heterosexual Affectional Systems in Monkeys, American Psychologist, 16, 1-9.

6. Kinnane, Mary, (1964), Preparation for College Teaching: Some Perceptions of Undergraduates and Woodrow Wilson Fellows. Vocational Guidance Quarterly, 12, 269-274.

7. Kinnane, Mary (1965), The Prestige of College Teaching, Vocational Guidance Quarterly, 13, 141-145.

9. Lee, Calvine, B.T. (1967), Improving College Teaching, American Council on Education, Lee, Calvine B.T., Editor, Washington, D. C.

10. Mori, Takako, (1965), Structure of Motivations for Becoming a Teacher, Journal of Educational Psychology, 56, 4, 175-183.

11. Olds, James (1958), Self Stimulation in the Brain, Science, 127, 315-325.

12. Slocum, Walter L. (1966), Occupational Careers, Aldine Publishing Company, Chicago.

13. Smith, Henry, Clay (1964), Psychology of Industrial Behavior, McGraw-Hill Book Company, New York.

14. White, R. W. (1959), Motivation Reconsidered, The Concept of Competence. Psychol. Rev., 66, 297-333.

15. Wise, Max W. (1967), Who Teaches the Teachers, Improving College Teaching, Calvin B.T. Lee, Editor, American Council on Education, Washington, D. C.